5: Schwimmer E-4,5 (1966-1967) 1973
OJ23 Orokaiva OJ23
Mountain Orokaiva

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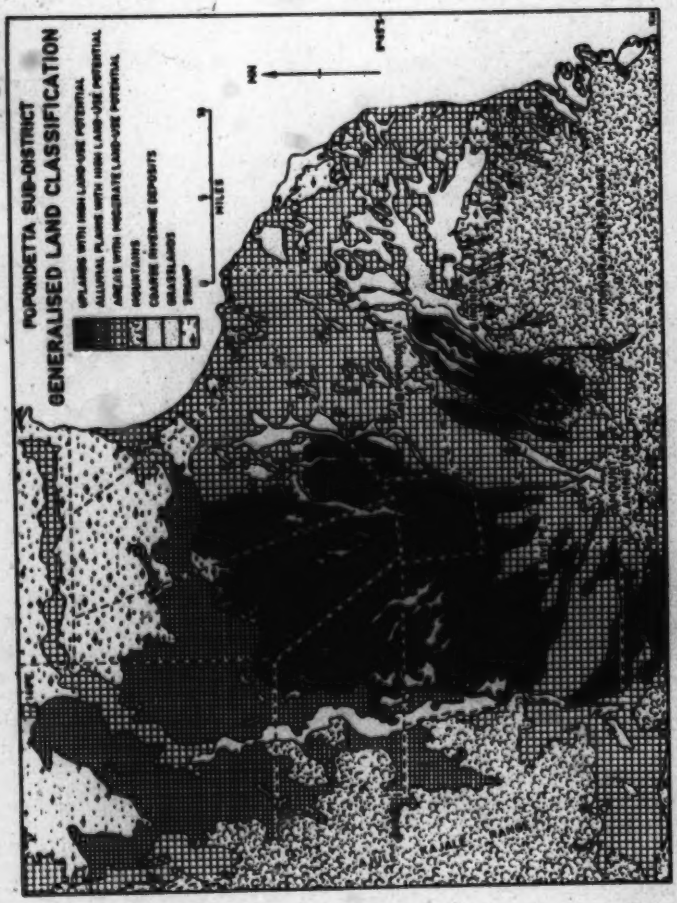

Fig. 1. Popondetta Sub-District: generalised land classification

5: Schwimmer E-4,5 (1966-1967) 1973
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Mountain Orokaiva

CHAPTER II

THE SETTING

1. *Geography*

Although several good descriptions of the physical environment and general culture of the Orokaiva are available (e.g. Williams 1930, Waddell and Krinks 1968), a brief sketch of the setting of this study may be convenient. The Orokaiva live in the Northern District of Papua, a district bounded on the south-west by the Owen Stanley range, on the west by the Mandated Territory of New Guinea. Although the administrative centre of the district, Popondetta, lies only about 150 miles from Port Moresby, there is no road connection, so that the only communications with the outside world are by air and sea.

The Orokaiva live on the footslopes of Mount Lamington and on the plains to the north and east of these footslopes. This region is, by New Guinean standards, highly favoured by nature, as Brookfield recently emphasised (1966). In a classification of the natural resources of New Guinea according to the degree of limitations to land use[1], Brookfield describes a large territory surrounding Mount Lamington as 'suitable for cultivation with a mild degree of limitation'. This comprises 'some of the largest tracts of such good land in the whole country' (*ibid.* 47–8).

One distinguishing feature of the region is its lithological composition: there is an abundance of Pleistocene and recent volcanic deposits. The total area of such recent ash and lava deposits found in New Guinea is small, but notably fertile. Brookfield maps the annual rainfall of the region as between 100 and 150 inches. This is not so high that the land becomes permanently or semi-permanently waterlogged. On the other hand, the region mostly lacks well-marked dry seasons during which the soil would rapidly dry out. With regard to terrain, the region has extensive areas of low and moderate relief and good drainage. As for density of population, Brookfield paints a somewhat idyllic picture that needs correction: 'the greatest concentration of population, rising locally to 60 per sq. mile, lies on the best land in the area – the little-dissected footslopes of Mount Lamington, where smooth topography is combined with fertile soils and good drainage' (*ibid.* 64).

We find, in fact, that local densities of 200 and more per sq. mile are not at all rare (Rimoldi 1966: 4). In two villages I surveyed, I found population densities to be 180 (Sivepe) and 135 (Hohorita) per sq. mile. Rimoldi's analysis shows that the Sivepe population density is close to the upper limit the land can sustain with present technology and social organisation. The sample he chose (50 persons of the Jegase and Timumu clans) happened to have under-average land holdings, of 138 acres. Rimoldi shows that 110 of these acres are needed for

[TEXT CONTINUED ON PAGE 15]

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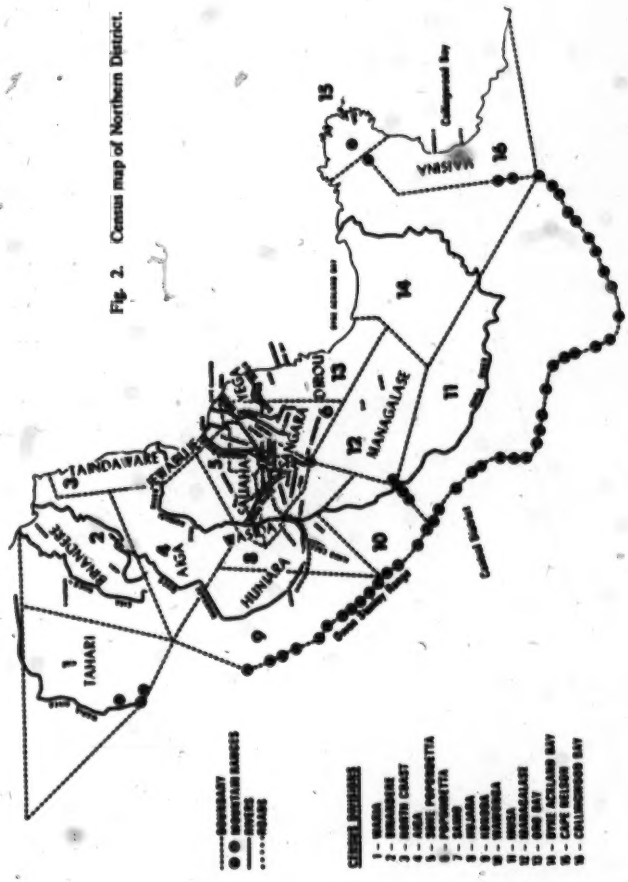

Fig. 2. Census map of Northern District.

5: Schwimmer E-4,5 (1966-1967) 1973
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Mountain Orokaiva

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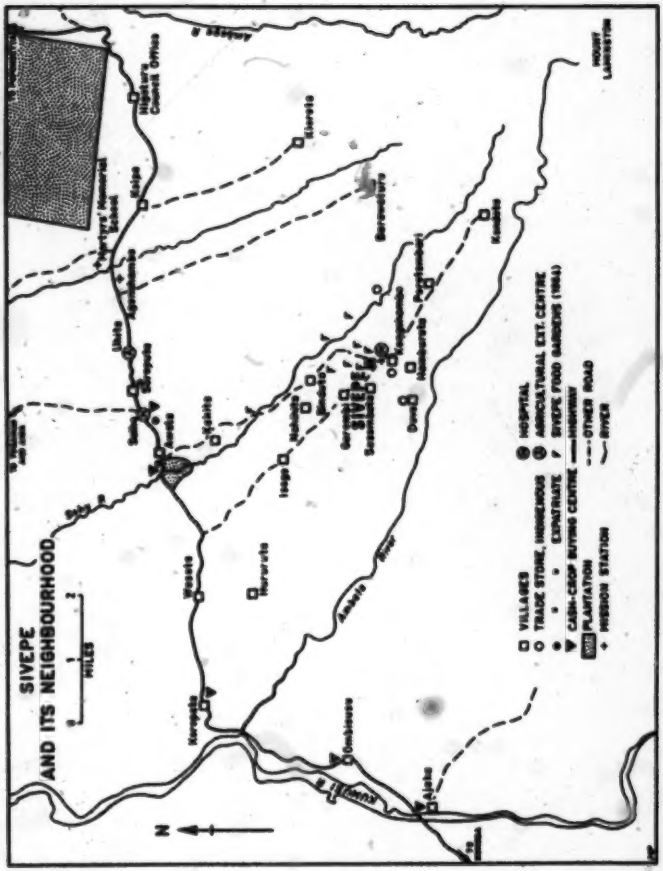

Fig. 10. Sivepe and its neighbourhood.

Native plantations as the mainstay of agricultural policy (1918 - 40)

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After the 1914-18 war, a shortage of labour, low produce prices and high shipping costs made it very difficult to attract European settlers to Papua. The emphasis of agricultural policy was therefore shifted and indigenous agriculture was seen as the only hope for the future. "If we cannot attract capital to develop the Territory", the Lieutenant-Governor wrote, "we must develop it without capital - that is, by native agriculture" (P.A.R. 1921-2 : 6). He saw two particular advantages in native agriculture over European; it did not require hired labour and it did not require large amounts of capital. It was clear the country would not be developed by the few European plantations then in operation (with a planted area of about 61,000 acres in 1923) and for the next decade at least Murray gave great emphasis to the development of "native plantations".

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[466]

In the Northern District[1] there had been little planting under the regulations since the turn of the century, but with the outbreak of the first world war the Resident Magistrate gave priority to expanding output by the compulsory planting of coconut, rubber and citrus trees; and 10,000 coconut and other economic trees were planted in 1914-15 under the direct supervision of patrol officers (P.A.R. 1914-15 : 49). By 1921 there were 46,404 coconut trees in the Orokaiva area but over half (25,642) had been planted within the previous five years. Almost all the rubber trees had been planted in the previous five years (P.A.R. 1920-1 : 48-50).

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Although the regulations did not prescribe that planting was to be either by individuals or groups, in all the post-1914 instances we are aware of in the Orokaiva area, each village or cluster of villages was in fact directed to plant as a

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(1) The Orokaiva area was included in the Buna and Kokoda Districts of the Northern Division until 1909, then in the Kumusi Division until 1920, and in the Northern Division (later termed the Northern District) since 1920.

423 obstacles,[1] but the policy of registering villagers' land was being implemented at the time of our surveys.

121 Inonda and Sivepe alike had experience with their council's registration scheme. The principal reason for working with these villages in particular is that they may be regarded as typical of two extremes among local communities in the council area. The following conspicuous variation was taken into account, in view of the need to investigate the relation of local conditions and problems to economic change in general and to the council's tenure scheme in particular.

161 Sivepe is located in the Saiho Census Division which has an overall population density of 75 persons per square mile, but there are local concentrations of much higher density, for example, 237 persons per square mile at Sivepe;[2] the density of the Saiho Division is the highest in the Northern District and the third highest among the rural census divisions in Papua,[3] but does not approach the densities found in several places in the New Guinea Highlands.[4] The density of the Buna Census Division where Inonda is situated is about 8 persons per square mile, the lowest among the Orokaiva.

133 The average size of Saiho villages is about 175 persons, compared with an average of 100 in the Buna Census Division. The
132 Sivepe people live on the highly fertile slopes of Mt Lamington, receiving an annual rainfall of about 160 inches; Inonda's land is lower, flatter and comparatively poor and receives about 95
131 inches a year. Inonda is 11 miles from Popondetta on the road to Oro Bay and Sivepe is roughly twice as far from the township, along a road leading inland.

101 For brevity we will speak of the 'mountain Orokaiva' as an
[133] alternative to 'Mount Lamington Orokaiva'. (See Keesing 1951:5-6.)
[162] This group, we believe, was the largest socio-political unit, the

[TEXT CONTINUED ON PAGE 6]

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1 For an account of the developments of the registration scheme see Crocombe and Hogbin 1963:89-93.

2 Population is over 8,000 and there are 8.6 acres available per head in the census division. The personal opinion of at least some local officers has been that local densities of 200, and more, persons per square mile are not at all rare in the division.

3 After Kaipi, Gulf District and Kubuna, Milne Bay District.

4 However, Keesing (1951:2) maintained that these Orokaiva on the Mt Lamington slopes achieved 'perhaps the densest settlement patterns of any of the shifting "dry" cultivators in the New Guinea area'.

C2| obscure any important differences in structure and our historical
36| data are not complete enough to permit of consistent distinctions,
[162] according to size, between 'hamlets' and 'villages'. The village
[632] of Sivepo now has a population of 120 and is linked with Binduta, several hundred yards away, and with Nahihita half a mile away, to form a unit in Administration censuses. The 3 villages, together with Awala No.2,[1] form a local government council electorate.

13| Sivepo is situated on the western bank of the Sohu River, a
49| tributary of the Kumusi River, about 25 miles by road south-west
[133] of Popondetta and roughly 7 miles north-west of the crater of Mt Lamington. It is on a jeep road leading from Kendata, high on the Mt Lamington slopes, to Awala, which lies 3½ miles north of Sivepo on the Kokoda-Popondetta road. The minor road was constructed in about 1944 following the route of an old track. Between Awala and Sivepo it is marked by the sites of 9 abandoned villages, first visible indication of the history of close settlement on the country it traverses.

797| There were very few facilities for formal education in this
871| tribal area until shortly after the second world war when a number of mission schools, staffed by Papuan teachers, were established through the area and 'minor elementary education was brought to over 90% of children of a varied age range' (Belshaw 1951.:2).

An Anglican Mission primary school was established at Sasembata, 1 mile south of Sivepo, in 1945 and a European teacher has been on the staff since 1951; 9 of the 13 children of approximately school age in the group we studied now attend.[2] Some children from Sivepo are pupils at Martyrs' Anglican Mission school several miles away at Agenahambo. A primary T school[3] was established at Awala in 1961 but no Sivepo children are pupils there.

Several villagers regularly attend the church at Sasembata, which is in the charge of a Papuan priest, and most make periodic use of the medical services provided by the mission sister. Some women consult an infant welfare clinic formerly available at the mission on alternate Tuesdays and some have joined a women's sewing class held on Wednesdays.

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1 To be distinguished from Awala 2, the 'hamlet group'.

2 The ages of pupils in the 4 grades would range roughly from 5 to 15 years.

3 A government school for Papuans at which the curriculum is adjusted to the needs or sophistication of the local pupils - as distinct from primary A schools, attended almost wholly by European children, where the syllabus is set by the N.S.W. Department of Education.

some toll on growth rates, size and length of life. Sows are quite prolific, however, and litters of 6 to 10 piglets which survive weaning are common. Boars are not numerous but it is claimed that the owner charges no fee for their services.

It is doubtful whether improved breeding and husbandry could in themselves induce a significant increase in the consumption of meat by pig owners. Pigs are too scarce in this area to meet the existing demand and priority is given to the use of pigs for distribution as pork at feasts or for gift exchanges. Very often neither a man nor his close kin have a suitable pig available when needed and in one such instance a price of £20 was set by the owner of a pig in another village.

Any person who aimed to establish a herd of significant numbers for commercial purposes would probably need to divorce himself as a participant from the network of exchanges which involve pigs.

e. Economic trees

Although the village is 23 miles from Gona on the coast and over 1,000 ft above sea level, most economic trees are abundant. The average household claimed 62 trees from which crops are gathered in season.[1] In order of numerical importance these were coconut, breadfruit, areca (betel) nut, sago, pandanus and tauga-nut (Cycas media) trees. Each household also owned one or two citrus, puga-nut (Terminalia okaria), mango or barkcloth trees. Sago does not grow wild in this area as it does on more low-lying land, but numerous small creeks provide sites suitable for planting. The 93 sago trees owned by Jegase and Timusu people are sufficient to meet the intermittent demand for sago for distribution at large gatherings or during the occasional period when there are limited amounts of the more common crops ready to be harvested from the village's gardens. Whenever a tree is harvested the owner is expected to share the sago widely with the other villagers whether they are his agnates or not.

Most villagers had lived in several villages, some of which are now abandoned, and had planted coconuts there which they still claim. They usually had similar numbers scattered over parcels of land where they had gardened in the past. Sixty-two per cent of all trees had been planted on the patrimonial land of the person claiming the trees. A man often plants trees while gardening on the land of affines or matrilateral kin and these trees are inherited by the planter's son.

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[1] These claims were not thoroughly investigated but their accuracy was checked on a number of sample parcels where householders claimed a specific number of trees of various kinds.

8: Waddell & Krinks E-4,5 (1964-1965) 1968 QJ23 Orokaiva QJ23

Chapter 1

The physical and social setting

This chapter summarises the physical and social background to current attitudes to cash cropping among the Orokaiva. 128

The physical environment

(a) Landforms (see Map 1)

Lying between the main New Guinea cordillera and the Pacific Ocean, the Popondetta sub-district[1] has a great variety of landforms and soils and, to a lesser extent, of vegetation.[2] Bounded on the south-west by the foothills of the Owen Stanley Range (4,000 ft) and on the south by Mt Lamington[3] and the Hydrographers Range (4,000 to 5,000 ft), the area comprises a broad plain sloping gently north-eastwards to the Pacific Ocean. Three elements may be distinguished within it: strongly dissected piedmont terraces, alluvial plains of volcanic materials (to the north-east of Mt Lamington) and flood plains from 10 to 25 miles wide extending from the terraces to the coast. All characteristically support primary or regrowth lowland forest except in the relatively drier and sandy areas, particularly on the plains north-east of Mt Lamington, where there are extensive stretches of grassland. 131 133 133 [137]

The CSIRO (Division of Land Research) considers (1964:17) that although there is more poor than good land in this area, 'some of the best land in the Territory' occurs on the gentle northern foot slopes of Mt Lamington and in parts of the flood plains where fertile volcanic soils and stratified sediments with a high organic content have developed. The major factors limiting land use are steepness of slopes in the mountain zone, and poor drainage and flooding in the lowlands. Soil deficiencies do not appear to be a serious limiting factor. 311 133

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1 An area of 3,712 square miles.

2 The following description is derived from CSIRO 1964:10-13.

3 A volcano which last erupted in 1951, resulting in extensive destruction and loss of life.

The Orokaiva comprise a number of groups, with mutually intelligible dialects and a high degree of cultural uniformity, extending some sixty miles northwards from the Hydrographers Range and from the coast inland to the foothills of the Owen Stanleys. The overall population density is only 9.1 persons per square mile but the distribution is highly uneven (see Table 1.3) with major concentrations on the fertile northern slopes of Mt Lamington (63.8 persons per square miles in the Saiho census division) and the coastal periphery (62.2 in Gona census division). The grassland and more northerly forest areas are only sparsely populated.

Table 1:3

Popondetta sub-district: demographic characteristics of selected census divisions, 1963

	Crude population density (persons per square mile)	Cultivable acres per head	Mean size of settlement
Saiho	63.8	9	216
Gona	62.2	6	221
Oro Bay	43.6	9	103
Sangara	26.7	9	197
Popondetta	17.2	19	109
Togohau	16.9	25	146
Asigi	9.1	53	87
Buna	8.4	31	94
Huhurindi	6.7	53	69

Source: Population data derived from DDA 1963 census data (1961 Popondetta, 1962 Saiho).

Small villages are the characteristic unit of settlement, with houses disposed in a more or less rectangular form around a central earth or grass 'square'. Their size varies in relation to overall population density, but nowhere exceeds 720 persons,[1] the mean being 144 persons. The social organisation and economy of the Orokaiva contribute to considerable instability in settlements, both in composition and site.

A village normally contains more than one clan branch[2] and consequently is not necessarily a landholding unit. Its members may have closer ties of kinship with residents of other villages than

[1] Kiorota village in Saiho census division.

[2] See p.10.

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

Chapter 4

The two communities: Sivepe and Inonda

184 The villages of Sivepe and Inonda represent the extremes of population density, and therefore land availability, in the sub-district. There are significant differences between them in resources and in the degree and character of their participation in the monetary economy and their interactions with the principal external agencies.

Sivepe

133 Sivepe is situated 1,300 feet above sea level on the lower north-
[134] western slopes of Mt Lamington. Its land is classified by the CSIRO survey (1964:32) as belonging to the Awala Land System and is
137 characterised by fertile loam topsoils and a close-textured drainage system. The vegetation comprises predominantly secondary forest and various stages of regrowth, with little grassland. The land-
311 use potential is regarded as high and the fertile, well-drained soils are best suited for perennial (tree) crops.

361 The village is located in the most densely settled part of the sub-district, the Saiho census division, and there are eighteen villages within a radius of three miles (see Map 3). It has been
[131] on its present site for about ten years, but preparation of a new site, less than one mile away, was commenced late in 1964. Sivepe is twenty-eight miles from Popondetta by road, the last three miles being a little-used jeep track linking Awala with the villages on the lower slopes of Mt Lamington. Consequently, coffee and rubber have to be carried to Awala (or nearby Saiho) to be sold and purchases are normally made in the trade stores there. At Awala are a European rubber plantation, a rubber factory which purchases village latex and a well-stocked trade store. At Saiho are two trade stores, the principal Administration hospital for the Northern District (where medical orderlies and infant welfare nurses are trained) and a primary 'T' school. In mid-1964 a daily bus service was established between Saiho and Popondetta.

491 Also in mid-1964, several villages voluntarily commenced the
[499] construction of a new all-weather road, linking Sasembata mission

[TEXT CONTINUED ON PAGE 37]

361 Inonda lies in Buna census division, the most sparsely settled part of the Popondetta sub-district (with the exception of Huhurunda). Apart from an ex-servicemen's settlement block, there are only four villages within a three mile radius of both village sites (see Map 5). At the beginning of the survey, Inonda was on a site it had occupied since 1956, but during 1964 it was rebuilt about a mile to the south-west, still on the forest-grassland border.

491 368 131 The village is about ten miles from Popondetta, to which it is linked by a good all-weather road. About three miles towards Popondetta, west of the Girua River, is Hohota village and its off-shoot settlement, Ijika, where there is a local government council aid post, a church and attached primary school (with classes to standard III), and a trade store. Running north-east from the main road parallel to the Girua River is a line of ex-servicemen's settlement blocks - one expatriate - and eleven Papuan-owned, one of them by a former resident of Inonda and several others from nearby villages. There are five trade stores on or near the blocks, two of them expatriate-owned, and a new Administration school. This latter is not used by the Inonda people, although they believe it to be a higher standard than the mission school. Eastwards from Inonda, the road runs through sparsely-populated grass plains to the coast at Oro Bay. Late in 1964 the Popondetta airstrip was closed and a wartime tarmac strip two miles east of the village was reopened to serve the township, with a consequent increase in traffic along the main road.

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MAP 5

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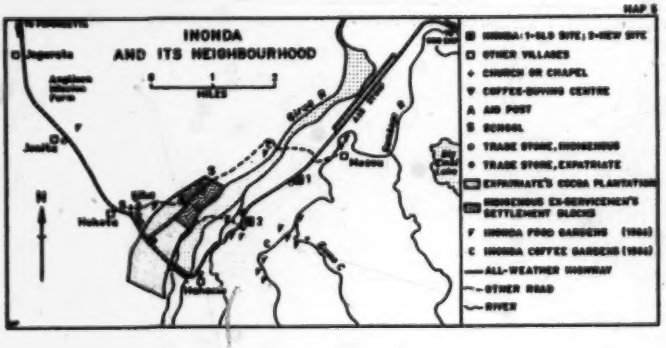
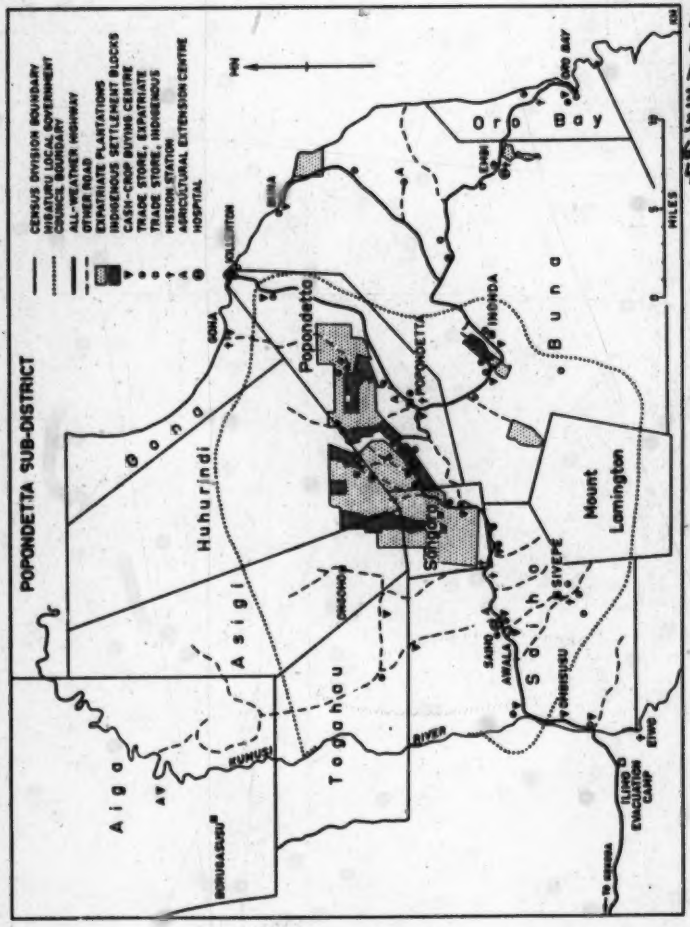


9: Kearney P-5 (1963) 1966 OJ23 Orokaiva OJ23



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Introduction

121 The New Guinea Research Unit of the School of Pacific Studies of the Australian National University invited the author to evaluate the cognitive ability of groups of subjects who were being studied as part of a larger project. These were the Orokaiva people of the Northern District of Papua. Other related studies in the area had been or were being carried out at Inonda (Crocombe and Hogbin 1963), Gona (Dakeyne 1965), Sivepe and Borugasusu (Rimoldi 1966a, b), Ongoho (Crocombe 1964), the ex-servicemen's settlement scheme (Cheetham 1963) and in expatriate plantations (Howlett 1965).

131 197 The Orokaiva live on the Popondetta plain and in the Mt Lamington foothills, and share mutually understandable languages. They have been described by Crocombe (1963) as follows:

105 [161] [619] [423] [614] The Orokaiva people number roughly 26,000 and are divided into about twelve tribes. The tribes are very loose units and recognise no single leader and before European contact, warfare within the tribe was not uncommon. ...there are no land rights at a tribal level. Each tribe is divided into a number of named clans. A clan is seldom localised, and usually it is divided into a number of sub-clans which are dispersed over various parts of the tribal territory. Each sub-clan holds rights over a specific area or areas of land.

177 795 There has been European contact of some form over a long period. The people are perhaps best known by the work of Williams (1928 and 1930) in which he describes the earlier cult movements and the attempts to master and control new contact situations. Two of these were the cult of the Baigona men and the Taro cult. The former was concerned with healing and sorcery through a type of priest who was in communication with the spirits of the dead and now resident in various reptiles, particularly the snake. The latter was evidenced in sorcery through a priest who was possessed with the spirit of the Taro. Violent dancing or ecstatic movements often accompanied by a trance were not unlike the dance of St Vitus or St John which swept Europe in the fourteenth century (Sargant 1957).

648 177 The initial Japanese occupation of Papua took place in the Northern District as the Japanese marched towards Port Moresby via

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Figure 1

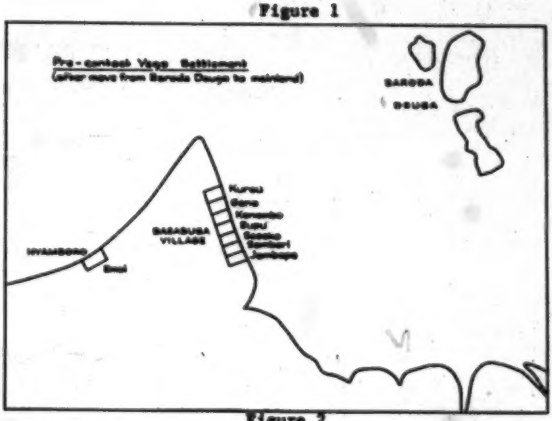


Figure 2

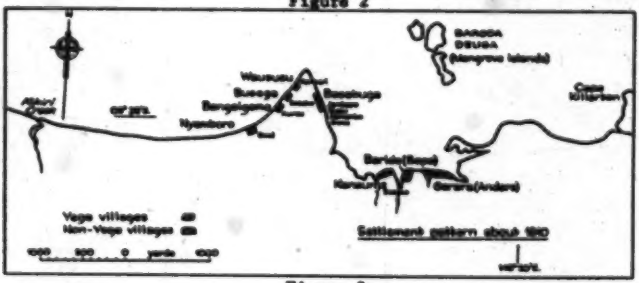
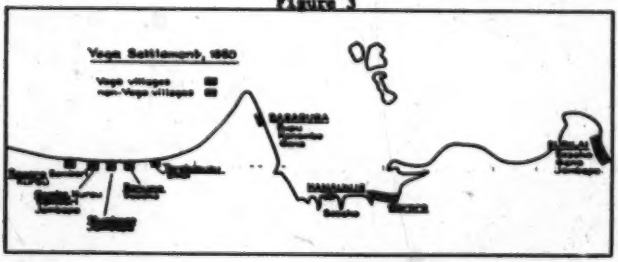
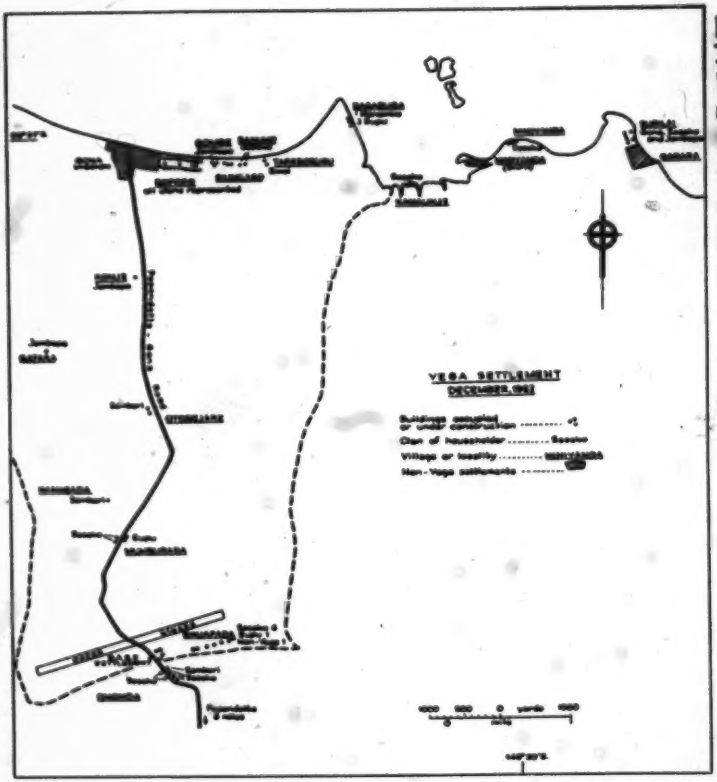


Figure 3



10: Dakoyne K-5 (1962-1964) 1966 QJ23 Orokaiva QJ23
Yega
Ononda

Figure 4



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10: Dakeyne K-5 (1962-1964) 1966 QJ23 Orokaiva QJ23
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Ononda

Figure 5

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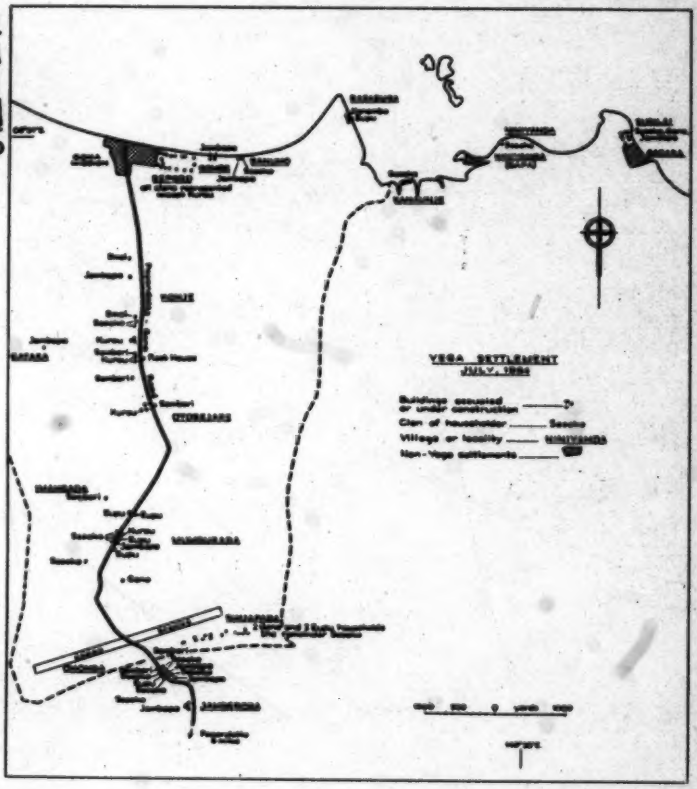

CHAPTER 1 - INTRODUCTORY

Location and facilities

131 Inonda is situated about eleven miles from Popondetta on the Oro Bay road. Up to the present, access to Popondetta has been dependent on the state of the Girua river but with the completion of a bridge later this year all-weather access will be ensured. Inonda lies within the Orokaiva culture area and is served by the Higaturu Local Government Council. Administration patrols visit the village once or twice annually.

368 [811] [787] The nearest school is about six miles away across the river at Hohota. Some children attend this school spasmodically and a few board at church schools at Popondetta or Embi. Others do not go to school at all. There is an Anglican church in the village though it is little used except when an itinerant priest happens to be passing by.

498 [366] 499 Kerosene, tobacco, sugar, salt and other household requirements are usually purchased from a small trade store about three miles distant but larger purchases are made in Popondetta. There are four main items of traditional trade which appear to follow particular routes. As betel nuts do not grow well in Inonda these are bartered or purchased from inland tribes (usually through relatives) and the lime which is chewed with them is acquired from the coast. Traditional valuables (hambo) are acquired most frequently by barter with the coastal people, but birds' feathers for making head-dresses (di) are obtained from the Managalas tribes in the mountains in exchange for dogs, money and other items. The advent of shotguns has reduced the trade in feathers to those of birds of paradise and other relatively rare species. In bygone days clay pots and wooden bowls were traded from the coast in return for feathers and other valuables but with the advent of cheap imported utensils this trade has ceased.

Physical features

133 Topography: The Inonda lands lie partly on the flood plains of the Girua and Sambogo rivers and partly in the

224 Snares and traps are set at strategic points to catch wild pigs. A snare consists of a wire noose attached to a sapling which is fastened under tension to a triggering device. Snares are usually concealed along paths in abandoned gardens. The traps are of two types: the pit-trap which is dug two to three feet deep along a path or near a hole in a fence and has old spear heads and sharpened hardwood stakes "planted" in the floor; and the jump-trap which consists of hardwood spikes set at an angle in the ground with the points facing a low "gate" in the fence, so that a pig which jumps the "gate" impales itself on the spikes.

220 There is some fishing in the local rivers throughout the year, but most fish are caught during the dry season when 222 the rivers are low and the water is clear, and spearing is then easy and profitable. The people forage for firewood, wild yams, bush cabbage, honey and other foods. Although these products may make an important contribution to diet, they seem to provide only a small proportion of the total volume of food consumed.

131 Boundaries: The external boundaries of the Inonda lands are known in detail where they follow or cross the Sambogo and Girua rivers, and where they cut the main road. Elsewhere the people recognize only general boundaries which follow hill-tops or other natural features. Within Inonda the Girua and Sambogo rivers and their tributary creeks form the most important boundaries and each area of land is known by some physical feature, frequently the name of the adjacent creek. On the southern side the land extends back into the mountains in some cases to include the whole watershed of the creeks which feed the Sambogo, and in others to meet the boundaries of the Mosou and Tandai'undi lands.

241 Each of the lands framed by the creeks is divided 423 between the lineages. Boundaries are marked by trees (especially hauga and poponda) and other natural features. The gardens of different families and of different individuals within families are marked, sometimes by rows of crotons, but more usually by continuous lines of dead saplings laid end to end between trees or stumps. Individual gardens are not named but are referred to by the name of the person who plants them.

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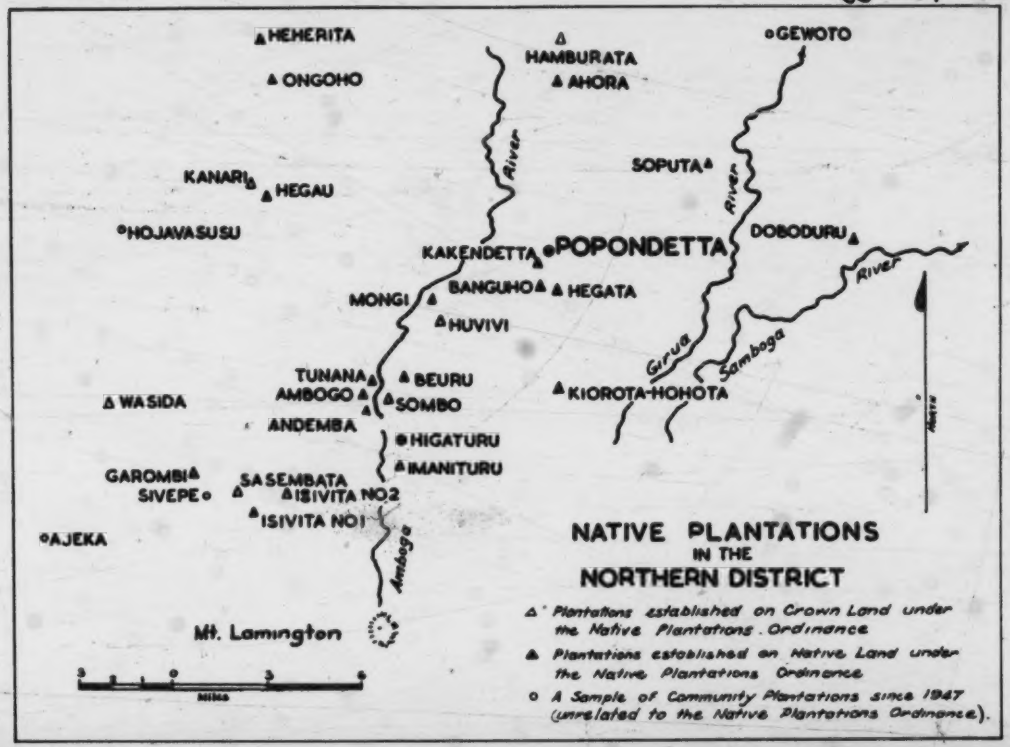

NATIVE PLANTATIONS
IN THE
NORTHERN DISTRICT

△ Plantations established on Crown Land under the Native Plantations Ordinance

▲ Plantations established on Native Land under the Native Plantations Ordinance

○ A Sample of Community Plantations since 1947 (unrelated to the Native Plantations Ordinance).

[end map]

6: Crocombe E-4,5 (1963) 1964 OJ23 Orokaiva OJ23

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

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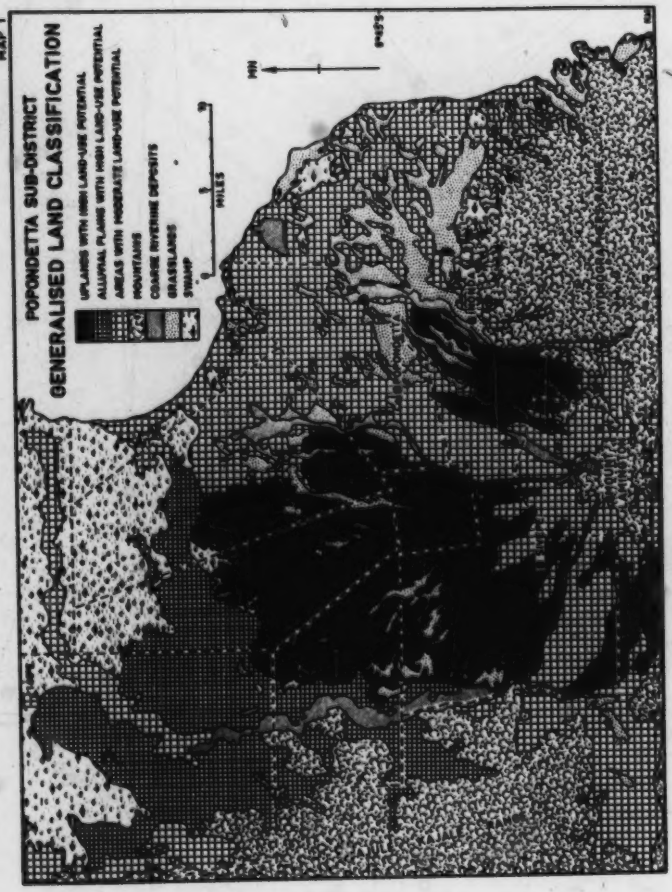

8: Waddell & Krinks E-4,5 (1964-1965) 1968 QJ23 Orokaiva QJ23

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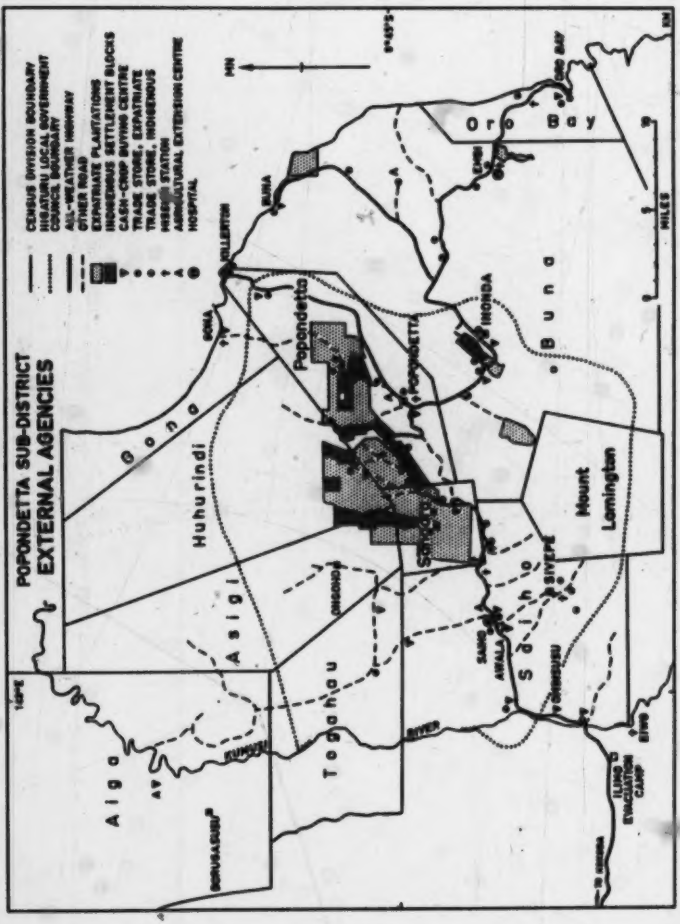

11: Dakeyne K-5 (1962-1964) 1966 QJ23 Orokaiva QJ23 Yega

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Appendix B

The Ombi-Tara environment and population

131 [133] Ombi village is in the Kokoda sub-district about twenty-seven miles from Popondetta along the main Popondetta-Kokoda road. It is situated on top of a plateau up a steep escarpment, about 250 yards from the main road. Tara is about two miles from Ombi and straddles the access road which runs through the converted land occupying part of two of the blocks. It was previously about two miles further away and was moved to its present site in 1964 after survey of the land to be converted was under way.

133 [361] The Kumusi River flows close to the Popondetta-Kokoda road, about four hundred yards from Ombi village. Ombi village was formerly sited next to the river but was moved to its present higher location in about 1957, reportedly to escape the mosquitoes.

871 872 [368] The nearest school is conducted by the Administration at Ajeka, about two miles away. Most children of the appropriate age attend school daily. Several of the older children board at schools in Popondetta while some children do not attend school at all.

366 438 439 The nearest trade store is at Ajeka but this is seldom open, and most purchases are made from the store operated by a European planter at Awala, a distance of seven miles. Clothing and larger items are purchased in Popondetta.

134 The Ombi-Tara lands are part of the Higatura land system which contains a considerable proportion of good land with reasonably fertile soils, suitable for many arable or tree crops as well as pasture.[1]

132 137 The most important features of the climate are the generally heavy rainfall, and the almost uniformly high temperatures and humidities throughout the year. Rainfall ranges from 120 to 150 inches annually and may well be greater in the higher areas, including Ombi-Tara. These climatic features are reflected in abundant plant growth. At Ombi-Tara rainforest covers much of the surrounding land, which is marked by a series of steep ridges.

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[1] See C.S.I.R.O. 1964.

614 423 000 No male member of a Yega clan has any rights whatsoever to land outside the consolidated block of parish territory. All Nasioi, on the other hand, are members of widely dispersed matrilineal clans. Many of them, both men and women, have rights to cultivate land far from their village of residence. For a Nasioi, the focus of loyalty is not the clan as a whole but the small segment of it with which he (or she) is intimately associated, in the parish where he lives.

177 [245] The degree to which contact with Europeans has affected each group differs greatly. The Northern District of Papua where the Yega live is the scene of recent rapid development in cocoa planting by both Europeans on large plantations and by indigenes on small-holdings. The Yega are a relatively well-educated group of people but they have a record of failure in the production of cash crops. Many of the younger Yega have therefore left the parish territory to work for wages in skilled and semi-skilled jobs in the towns. 241 433 [464] 000 Fewer Nasioi go to work in the towns but many have worked locally as plantation labourers. Recently copper has been discovered within their territory and now many men work for the mining company which offers higher

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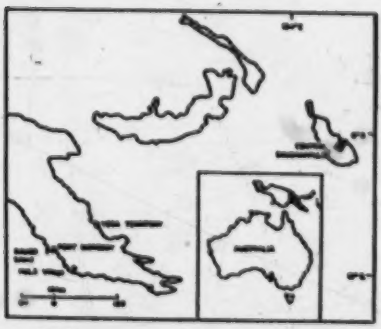

Fig. 1. Location of the three case studies

[P4-A]

18: Dakeyne K-5 (1962-1964) 1969
OJ23 Orokaiva OJ23
Yega

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[A villager shows off the fighting head-dress of his father. It is intricately made of boar tusks, shells, feathers, and hornbill beaks.]

THE YEGA OF NORTHERN PAPUA

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THE Yega is a group of nearly 900 people living in sixteen settlements, on an area of about twelve square miles, on the north coast of Papua. They live on a gently sloping alluvial plain between Mt Lamington and the sea. Yega territory is bounded by one large stream and crossed by several small creeks.

139 The plain was originally covered by mature rain forest 100-120 feet high, interspersed with elongated strips of grassland. Now, much of the original forest has been cut down, and secondary forest forty to fifty feet high has

132 replaced it. The climate is hot and wet throughout the year (Köppen Af.) but there is marked seasonality of precipitation. The north-west monsoon, November to April, brings two-thirds of the annual rainfall (average 100 inches per year); July and August with about four inches per month are relatively dry. The temperature is over 80°F on most days and rarely falls below 70°F on the coolest night, but the heat is alleviated by north-easterly sea breezes which blow during the afternoon and evening throughout the year.

175 The first reported contact between Euro-
179 peans and Yega was during an expedition along the coast by the Lt Governor of Papua,
799 Sir William McGregor, in 1893, but the first real step in the process of change occurred with the establishment of an Anglican mission
179 school on Waususu Point in 1909. From this
464 time until the outbreak of World War II, Yega men began leaving their villages to work
466 [P.5-A]

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claims by two or more groups frequently overlapped (Fig. 2). Because of this situation,

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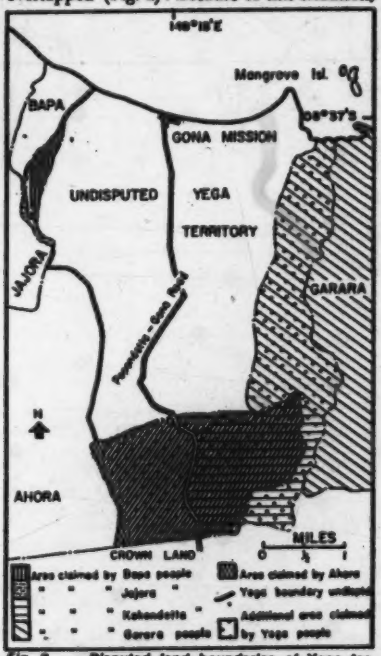

Fig. 2. Disputed land boundaries of Yega territory. (Redrawn from an original map by the Land Titles Commissioner, Popondetta.)

[P.6-A]

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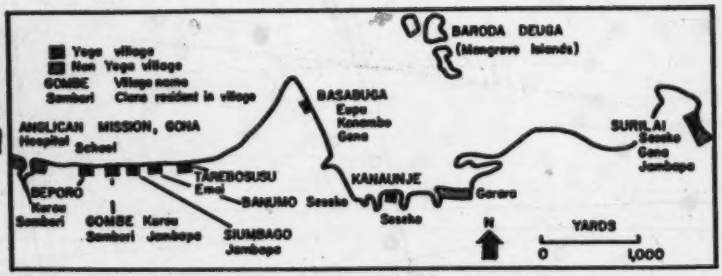

[P.12-C]

Fig. 8. Settlement pattern of the Yega in 1960

Section 2: Physical Environment

131 The present territory of Hohorita stretches from near Mount
133 Lamington (an elevation about equal to that of Sivepa) down to Double Crossing, which is about 600 feet above sea level. Rainfall at the top of the territory may be close to that of Sivepa, but further down
132 it decreases--though I doubt whether it would fall much below 150 inches per year anywhere on Sangara territory. The land yielded much the same wild and cultivated crops as in Sivepa. Before the eruption, the
361 concentration of population was entirely at the higher reaches of this territory, while the lower parts were used for hunting and other subsidiary activities. Those who survived the eruption because they were away from their villages were often hunting on this lower land. Today, the pattern of occupation has shifted. The lower part of the territory, near the new villages, is intensively used while the more elevated land is used a little less and often for coffee rather than subsistence crops.

731 The eruption has made minor changes to land contours: due to the floods, the watershed of the Ambogo River was gouged out forming a number of pools of stagnant water which formed a breeding ground for mosquitoes and leeches. These pests are blamed on the eruption by the local people. On the credit side, certain varieties of bananas and pumpkins, planted before the eruption, had the opportunity to grow wild during the year the land was unoccupied and are now thought of as having been brought to the district by the eruption.

162 The total Sangara population today would be about 472--of which
350 live in Hohorita and the rest in the three other villages. The
161 total land holdings of this population extend over 3.5 square miles--an average of about 135 per square mile. This places the Sangara in a somewhat superior economic position to Sivepa, which has to support at least 180 persons per square mile on land of the same quality. It must be remembered that prior to the eruption, the Sangara population was six times as large as it is today--so that Sangara must have suffered a chronic land shortage. All the neighbours of the Sangara are agreed that they were very warlike and dangerous enemies; they probably were in frequent need of extra gardening land. Today, they have enough land not only for subsistence gardening but also for a somewhat larger cash-cropping programme than is generally found in the Sasembata district.

621 The present site of Hohorita (see Map XIV)[6] developed in several
361 stages. First the Horeopa clan, which had the greatest number of survivors and therefore achieved dominance, shifted to the front part of Hohorita village in 1956. The mission station was established next to the village, separated from the village by a small stream. By 1958, all the Horeopa were settled in houses in the new village, together with the Oripa clan whom they had asked to join them while all the other inhabitants of Irihambo had shifted to the new mission

A [See Cat. 116, p. End Map 13--Analyst]

22: Schwimmer E-4,5 (1966-1967) 1969 OJ23 Orokaiva OJ23
Mount Lamington

[End Map 1]

Boundaries of Northern District

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22: Schwimmer E-4,5 (1966-1967) 1969 QJ23 Orokaiva QJ23
Mount Lamington

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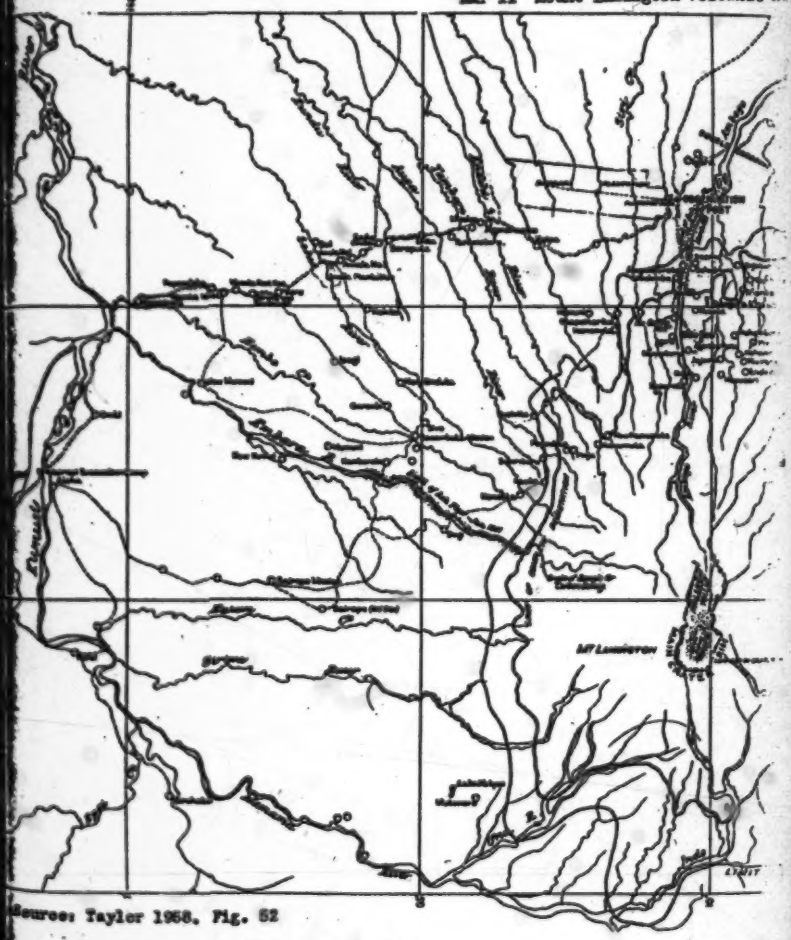
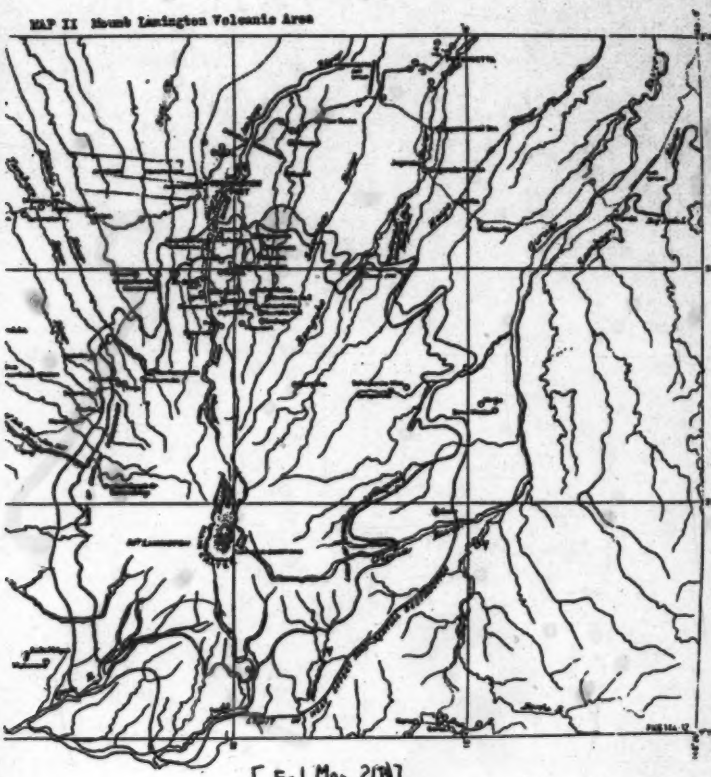
MAP II Mount Lamington Volcanic



Source: Taylor 1968, Fig. 52

[End Map 2(A)]

MAP II Mount Lamington Volcanic Area



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[End Map 2(B)]

Map IX

Source: Waddell & Krinks 1968: 34

[End Map 8]

22: Schwimmer E-4,5 (1966-1967) 1969 QJ23 Orokaiva QJ23
Mount Lamington

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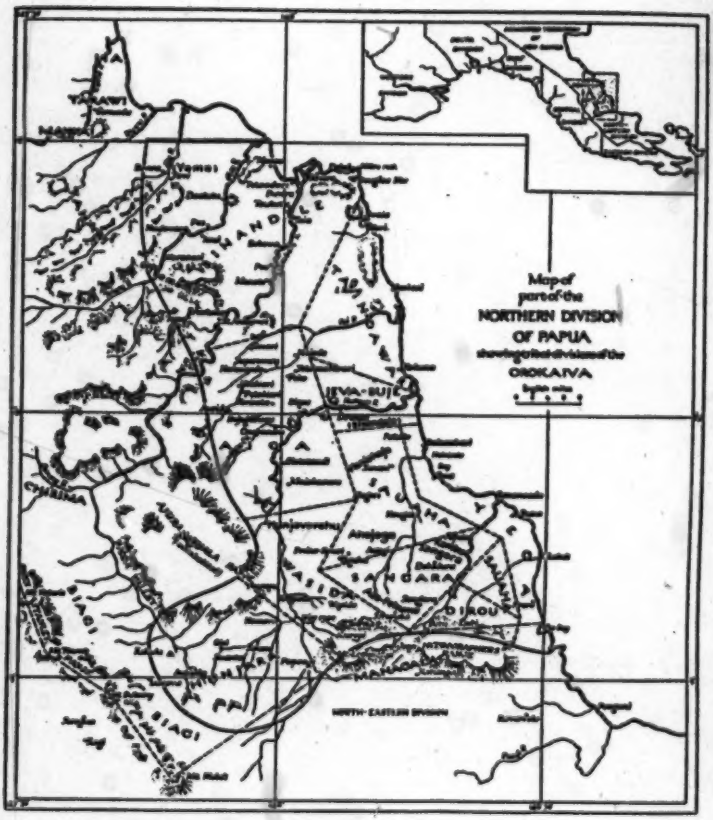
22: Schwimmer E-4,5 (1966-1967) 1969 QJ23 Orokaiva QJ23
Mount Lamington

Map X



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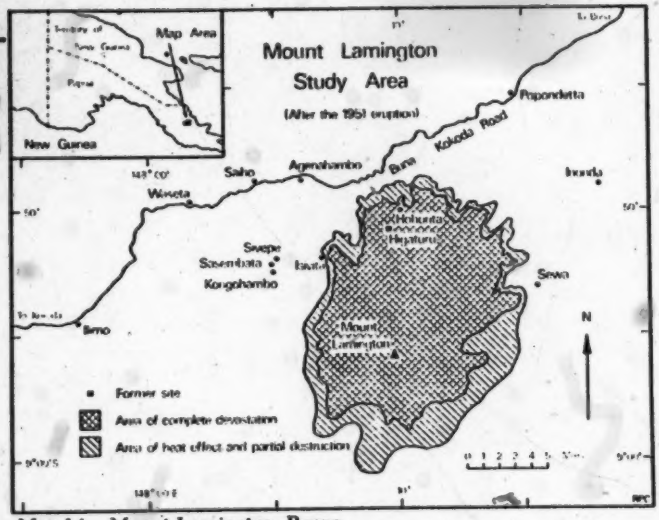
Source: Williams 1930

[End Map 9]

24: Schwimmer E-5 (1966-1973) 1977
OJ23 Orokaiva OJ23



Map 14. Mount Lamington, Papua.

survivors, established camps to house them, and set up a volcanological observation post. Acting on technical advice that further explosions were to be expected, the administration at once restricted access to a fairly wide area surrounding the crater, thus forbidding most of the fugitives to return to their homes. It was at this stage also that the administration called in two anthropologists, Felix Keesing and Cyril Belshaw, for advice on what should be done with the now homeless population.' Shortly after the two anthropologists left the scene in May 1951, volcanological studies indicated that the active, paroxysmal stage of activity of Mount Lamington had ceased and hence that a large part of the restricted area could be resettled. In March 1953, it was possible to reduce the restricted area still further, to a circle of 2 miles surrounding the crater. As a result of these events, virtually all arable land in the district was in use when I visited in 1966–1967. There were no displaced communities in the proper sense of the word. There had been movements of villages from the crater area to consolidated settlements in the vicinity of paved roads, but here convenience

25: Schwimmer E-5 (1966-1970) 1974 OJ23 Orokaiva OJ23

Rich data on the symbolism defining the *philia* relationship in religio-philosophic terms are available in Strathern (1971). I have already expounded elsewhere (Schwimmer, 1972) that the theme of *philia* (its establishment, disruption, and restoration) is a central issue in New Guinean thought and that it enters into many levels of culture: geographical, zoological, social, magical, religious, and aesthetic.

THE OROKAIVA CASE

Up to this point, I have given some empirical illustrations of simple analytical distinctions. Thus, we can no longer take for granted that the *philia* universe always consists of friends and kin for it may define all friends as kin (as in the Maori) or vice versa (as in the Telefolmin). On the other hand, there are societies where the distinction friend/kin is of subordinate importance because the *philia* universe is classified by different criteria such as cooperative/competitive (Tangu) or real/feeble (South Fore). Then again, there are societies where consanguinity is a distinctive criterion within the *philia* system, but only in combination with other factors (Melpa).

If the Orokaiva case, of which a description now follows, seems more complex than the preceding ones, this may be attributed, at least to some extent, to my method of presentation. While most Oceanic sources are too brief on the subject of friendship to enable us to go beyond summary statements,[5] the Orokaiva facts resemble those reported by Burridge (1957a; 1969) in many respects. But in some respects, the Orokaiva system seems more explicit. It differs from Tangu in having a slightly stronger patrilineal emphasis, less emphasis on collateral relations, and a stronger avoidance of affines. The Orokaiva marriage system, reported elsewhere (Schwimmer, 1970a), seems more highly structured. These factors are probably related to higher population density, larger social networks, higher soil fertility, and more pervasive warfare.

The Orokaiva (population 25,000) live on the fertile volcanic loam of the Mount Lamington foothills. Their main crop of taro once supported villages of six to twelve families, although now, the villages are often larger mainly because of pressure from the Australian administration. Williams (1928, 1930)[6] characterized the society as patrilineal with a strong bilateral emphasis. Women hold a relatively high position which is maintained

5 Early accounts of New Guinea friendship relations are in Mead (1938) and Williams (1940). Later accounts of a *namei* type of relationship are in Pouwer (1953) and Hogbin (1964) and of the *otavo* type in Heider (1970), Oliver (1955), Schoorl (n.d.). The "resemblance friends" found by Williams among the Elema are not unlike the fictive *dimbo* of the Orokaiva.

6 Other useful sources on Orokaiva social organization are Crocombe and Hogbin (1963), Rimoldi (1966), Krinks and Waddell (1968), Schwimmer (1967, 1969, 1970a, 1970b, 1970c, 1972).

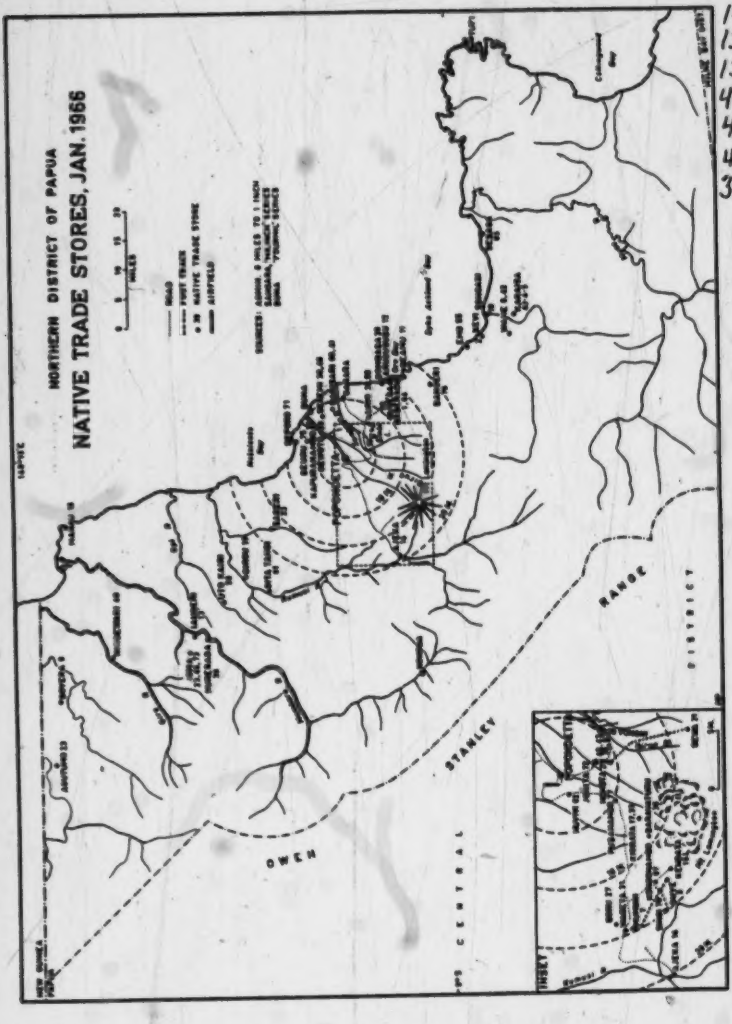
26: Schwimmer E-5 (1966-1970) 1974
OJ23 Orokaiva OJ23

phasis on the "logic of the concrete," is equally insistent on precision in matters of material culture, because in the analysis of symbols it often happens that important distinctions are made between species, varieties, subvarieties, methods of food preparation, of the manufacture of objects, and the like.

Quite apart from this concern with meticulous classification, componential analysis, and lexical-semantic relations, it seems to me profitable to turn to the semiotics of material objects, especially if the field of connotation and denotation crosscuts numerous levels of conceptualization. There are some objects in every culture which may almost be regarded as "total phenomena" in the Maussian sense: they are at once of economic value, expressive of social relations, ploys in a political strategy, and religious symbols. They also appear as the subjects of myths. As a general rule, they are utilized as objects of exchange, which explains why they are as multivalent as exchange itself.

At least part of their significance in anthropology lies in their capability to link the levels of myth and ritual. The best way of explaining what I mean by this suggestion is to give some instances of semiotic analyses of objects which may be called "total phenomena," and include in these analyses the levels of both myth and ritual. Their role as "logical operators" linking these levels will then become obvious. Though my argument draws on a wide range of structuralist literature, the most important sources are Lévi-Strauss' introduction to Mauss' *Sociologie et anthropologie* (Lévi-Strauss 1950) and the Finale of *L'Homme Nu* (1971).

The ethnographic data are from the Orokaiva, a tribe in the northern district of Papua, where I did fieldwork for one year in 1966–1967 and for another three months in 1970.[1] The Orokaiva live on the fertile slopes of Mount Lamington. They are swidden agriculturists, whose main crop is taro, while yam, sweet potato, sago, sugar cane, coconut, and numerous other nuts, as well as latterly German taro are subsidiary crops. Areca grows in most of the district. The population of 25,000 is very dense on the actual slopes of the volcano, sparser in the riverine areas. The kinship system is patrilineal, with a strong bilateral emphasis. I have given a detailed description of the various forms of



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17: Morawetz U-4,5 (1966) 1967 QJ23 Orokaiva QJ23
Ombi-Tara

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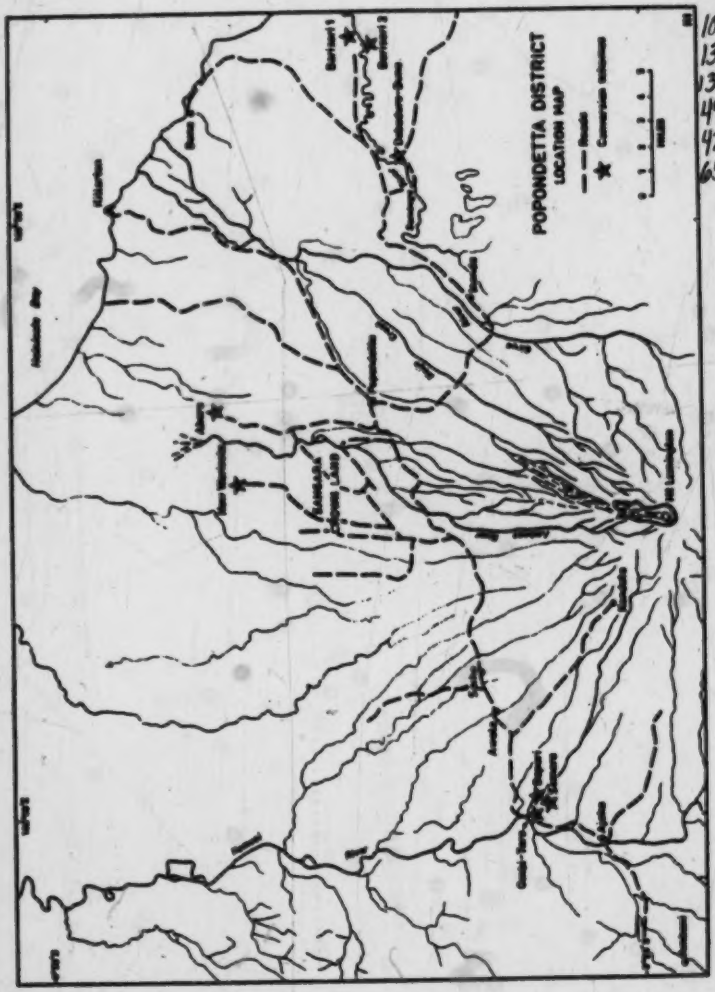

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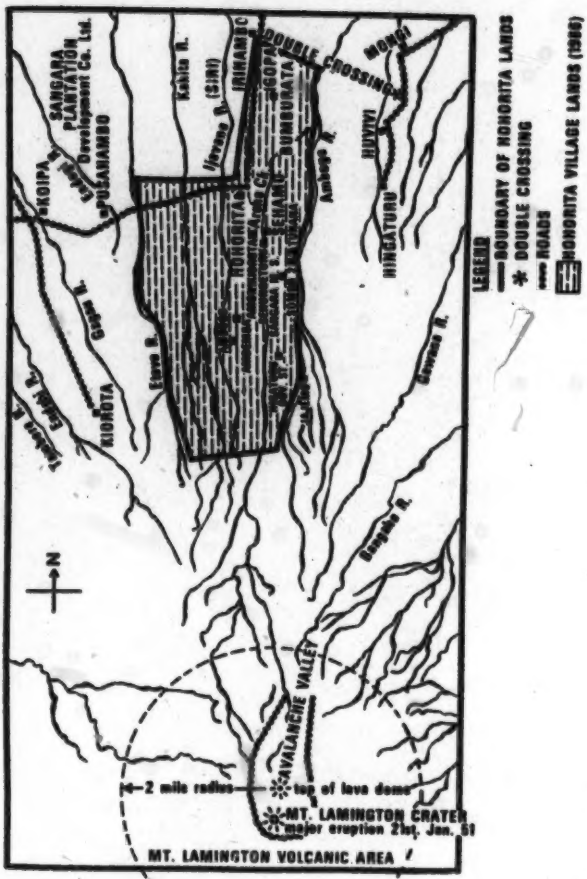
22: Schwimmer E-4,5 (1966-1967) 1969 OJ23 Orokaiva OJ23
Mount Lamington



Map XIII

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[End Map 12]